# Ferromagnetic resonance biochip for diagnosing pancreatic cancer

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Abstract: The objective of the paper is to develop a "lab-on-a-chip" device for early disease (pancreatic cancer) diagnosis by using ferromagnetic resonance (FMR). Magnetic microbeads, which are functionalized for target molecules (antigens), are immobilized by antigen-antibody reactions on the surface of a microwave circuit. These magnetic labels are detected inductively using FMR, which detects a single bead with a sensitivity of 1-10 μV/V. This method has distinctive advantages compared to other conventional immunoassay techniques; it requires a small sample volume, is non-invasive, cost effective, and easy to implement. It also does not alter the native properties of the antigen and antibody complex.
Author Keywords: Biomarker; Cancer; Immunoassay; Microbead

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